Fact Sheet

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Byproduct Materials

The Nuclear Regulatory Commission's mandate to protect public health and safety and the environment, and to provide for the common defense and security, includes regulation of byproduct material used for commercial, medical, and academic purposes. The NRC and its predecessor, the Atomic Energy Commission, have regulated the use of radioactive materials since 1946.

Byproduct material is radioactive material that results from the use of uranium or thorium in a nuclear reactor. Examples include Cobalt 60, Cesium 137, and Iridium 192. Another type of byproduct material is the tailings or wastes produced by the extraction of uranium or thorium from ore.

Byproduct material is regulated by either state or federal laws. Thirty-three states, known as Agreement States, have entered into agreements with the NRC to regulate the use of byproduct material, as authorized by the Atomic Energy Act. These states issue licenses and currently regulate approximately 16,000 materials licensees. The NRC maintains jurisdiction in matters regarding the common defense and security, such as security enhancements in the use of byproduct material.

Commercial licensees use byproduct material in both civilian and military applications in such areas as industrial radiography, manufacture of gauging devices, gas chromatography, and well logging. Byproduct material is also used by the general public in various consumer products, such as smoke detectors, “Exit” signs, static eliminators, and luminous watch dials. Medical licensees use byproduct material for the diagnosis or treatment of patients in hospitals or physicians' offices, with an estimated 10 million to 12 million clinical procedures performed annually. Colleges, universities, and other academic institutions use byproduct material in course work and research.

The NRC regulates the use of byproduct material in 17 non-Agreement States, the District of Columbia, the Commonwealth of Puerto Rico, and various territories of the United States. The NRC also regulates federal licensees in all states. Currently, NRC administers approximately

5,000 licenses. In Fiscal Year (FY) 2003, the NRC completed 4,236 reviews of materials licensing actions, including new applications, amendments to existing licenses, license renewals, and sealed source and device reviews. The NRC conducted 1,423 inspections of materials licensees in the same year.

The NRC conducts nearly all of its materials licensing and inspection activities from its four regional offices. The Office of Nuclear Material Safety and Safeguards (NMSS) provides technical support and guidance, and conducts periodic evaluations of the regional programs to ensure their technical adequacy, consistency, and timeliness. The Office of State and Tribal Programs, together with NMSS, conducts similar evaluations of the Agreement States.

May 2004